

Ser. No. 10/065,436 (Travelite *et al.*) (Filed: 10/17/2002)
Amendment dated 2/28/2005
Reply to Office Action of 12/1/2004

Page 2

IN THE CLAIMS:

1. (Cancelled)
2. (Previously Presented) A hollow polycster filament consisting essentially of polyethylene terephthalate having sufficient openings therin for said hollow filament to substantially fill with a liquid selected from the group consisting of water, water-based solutions, and water-based suspensions.
3. (Cancelled)
4. (Previously Presented) A staple fiber cut from the hollow filament of Claim 2.
5. (Original) A staple fiber according to Claim 4 and having a length sufficient to exhibit fiber properties.
6. (Original) A staple fiber according to Claim 4 and having a length sufficient to support a meniscus of water at each end thereof.
7. (Original) A staple fiber according to Claim 4 having a length of between about one-quarter inch and two inches.
8. (Original) A nonwoven fabric formed from a plurality of staple fibers according to Claim 4.
9. (Original) A nonwoven fabric formed from a plurality of staple fibers according to Claim 7.

Scr. No. 10/065,436 (Travelute *et al.*) (Filed: 10/17/2002)
Amendment dated 2/28/2005
Reply to Office Action of 12/1/2004

Page 3

10. (Original) An absorbent structure that includes a nonwoven fabric according to Claim 9.

11. (Previously Presented) A hollow filament according to Claim 2 wherein both said filament and its hollow portion have respective circular cross section.

12. (Previously Presented) A hollow filament according to Claim 2 wherein said filament has a circular cross section and said hollow portion has a non-circular cross section.

13. (Previously Presented) A hollow filament according to Claim 2 wherein said filament has a non-circular cross section and said hollow portion has a circular cross section.

14. (Previously Presented) A hollow filament according to Claim 2 wherein said filament has a non-circular cross section and said hollow portion has a non-circular cross section.

15. (Original) A hollow staple fiber consisting essentially of polyethylene terephthalate and having sufficient openings therein for said staple fiber to substantially fill with water.

16. (Original) A polyester filament having a moisture absorption capability of between about 10 and 30 percent by volume.

17. (Original) A filament according to Claim 16 consisting essentially of polyethylene terephthalate.

18. (Original) A hollow filament according to Claim 16.

Scr. No. 10/065,436 (Travclute *et al.*) (Filed: 10/17/2002)
Amendment dated 2/28/2005
Reply to Office Action of 12/1/2004

Page 4

19. (Original) A hollow filament according to Claim 16 wherein both said filament and its hollow portion have respective circular cross section.
20. (Original) A staple fiber cut from the filament of Claim 16.
21. (Original) A nonwoven fabric formed from the staple fiber of Claim 20.
22. (Original) An absorbent structure that includes a nonwoven fabric according to Claim 21.
23. (Original) A hollow filament according to Claim 18 and having an asymmetric cross section.
24. (Original) A hollow filament according to Claim 23 wherein both said filament and its hollow portion have respective circular cross section and said hollow portion is not coaxial with said filament.
25. (Original) A staple fiber cut from the filament of Claim 23.
26. (Original) A nonwoven fabric formed from the staple fiber of Claim 25.
27. (Original) An absorbent structure that includes a nonwoven fabric according to Claim 26.
28. (Original) A staple fiber consisting essentially of polyethylene terephthalate and having a moisture absorption capability of between about 10 and 30 percent by volume.

Ser. No. 10/065,436 (Travelute *et al.*) (Filed: 10/17/2002)
Amendment dated 2/28/2005
Reply to Office Action of 12/1/2004

Page 5

29. (Original) A hollow filament having an asymmetric cross section and having sufficient openings therein for said hollow filament to substantially fill with liquid.

30. (Original) A hollow polyester filament having an asymmetric cross section and having sufficient openings therein for said hollow filament to substantially fill with a liquid selected from the group consisting of water, water-based solutions, and water-based suspensions.

31. (Original) A filament according to Claim 29 consisting essentially of polyethylene terephthalate.

32. (Original) A filament according to Claim 29 wherein both said filament and its hollow portion have respective circular cross sections and wherein said hollow portion is not coaxial with said filament.

33. (Original) A staple fiber cut from the filament of Claim 29.

34. (Original) A staple fiber according to Claim 33 having a length of between about one-quarter inch and two inches.

35. (Original) A nonwoven fabric formed from a plurality of staple fibers according to Claim 34.

36. (Original) An absorbent structure that includes a nonwoven fabric according to Claim 35.

37. (Original) A hollow staple fiber consisting essentially of polyethylene terephthalate;

Ser. No. 10/065,436 (Travelute *et al.*) (Filed: 10/17/2002)
Amendment dated 2/28/2005
Reply to Office Action of 12/1/2004

Page 6

said staple fiber having sufficient openings therein for said staple fiber to substantially fill with a liquid; and

said staple fiber and its hollow portion having respective circular cross sections and wherein said hollow portion is not coaxial with said staple fiber.

38. (Original) A hollow staple fiber according to Claim 37 having sufficient openings therein for said staple fiber to substantially fill with a liquid selected from the group consisting of water, water-based solutions, and water-based suspensions.

39. (Withdrawn) A method of forming a highly water-absorbent polyester filament, the method comprising:

contacting a hollow polyester filament with a chemical composition in an amount and for a time sufficient to attack the hollow filament and create sufficient openings therein for the hollow filament to substantially fill with a liquid while less than an amount that would completely open or dissolve the filament.

40. (Withdrawn) A method according to Claim 39 comprising creating sufficient openings for the hollow filament to substantially fill with a liquid selected from the group consisting of water, water-based solutions, and water-based suspensions.

41. (Withdrawn) A method according to Claim 39 comprising contacting the filament with an aqueous alkali solution.

42. (Withdrawn) A method according to Claim 41 comprising contacting the filament with the aqueous alkali solution at an elevated temperature.

43. (Withdrawn) A method according to Claim 41 comprising contacting the filament with an aqueous solution selected from the group consisting of sodium hydroxide, potassium

Ser. No. 10/065,436 (Travelut *et al.*) (Filed: 10/17/2002)
Amendment dated 2/28/2005
Reply to Office Action of 12/1/2004

Page 7

hydroxide and ammonium hydroxide.

44. (Withdrawn) A method according to Claim 39 comprising contacting the filament with an organic solvent for polyester.

45. (Withdrawn) A method according to Claim 39 comprising contacting the filament with a solvent selected from the group consisting of: benzene, esters and ketones.

46. (Withdrawn) A method according to Claim 39 comprising contacting the filament with a plasticizer.

47. (Withdrawn) A method according to Claim 39 comprising contacting a polyethylene terephthalate filament.

48. (Withdrawn) A method according to Claim 39 and further comprising the step(s) of spinning the hollow filament from a melt prior to the step of contacting the filament with the attacking composition.

49. (Withdrawn) A method according to Claim 48 comprising spinning a hollow filament with an asymmetric cross section.

50. (Withdrawn) A method according to Claim 39 and further comprising cutting the filament into staple fibers.

51. (Withdrawn) A method according to Claim 50 and further comprising forming a nonwoven fabric from the cut staple fibers.

Ser. No. 10/065,436 (Travelute *et al.*) (Filed: 10/17/2002)
Amendment dated 2/28/2005
Reply to Office Action of 12/1/2004

Page 8

52. (Withdrawn) A method according to Claim 41 and further comprising neutralizing the filament after contacting the filament with the aqueous alkali solution.

53. (Withdrawn) A method according to Claim 39 and further comprising the steps of:

heat setting the filament;
cutting the filament into staple fibers; and
baling the cut staple fibers;
all following the step of contacting the filament with the chemical composition.

54. (Withdrawn) A method of forming a highly absorbent synthetic polymer filament, the method comprising:

contacting a hollow polymeric filament with an organic solvent for the polymer in an amount and for a time sufficient to attack the hollow filament and create sufficient openings therein for the hollow filament to substantially fill with a liquid while less than an amount that would completely open or dissolve the filament.

55. (Withdrawn) A method according to Claim 54 comprising creating sufficient openings for the hollow filament to substantially fill with a liquid selected from the group consisting of water, water-based solutions, and water-based suspensions.

56. (Withdrawn) A method according to Claim 54 comprising contacting a hollow polyester filament with the solvent.

57. (Withdrawn) A method of forming a highly absorbent synthetic polymer filament, the method comprising:

mechanically cracking a hollow polymeric filament until the filament is sufficiently open to substantially fill with a liquid.

Ser. No. 10/065,436 (Travelute *et al.*) (Filed: 10/17/2002)
Amendment dated 2/28/2005
Reply to Office Action of 12/1/2004

Page 9

58. (Withdrawn) A method according to Claim 57 comprising mechanically cracking a hollow polyester filament until the filament is sufficiently open to substantially fill with a liquid selected from the group consisting of water, water-based solutions, and water-based suspensions.

59. (Withdrawn) A method according to Claim 57 comprising cracking a filament that has a asymmetric cross section.

60. (Withdrawn) A method according to Claim 59 and further comprising the step of spinning the asymmetric filament from a melt prior to the step of mechanically cracking the filament.

61. (Withdrawn) A method according to Claim 59 and further comprising cutting the filament into staple fiber.

62. (Withdrawn) A method according to Claim 61 and further comprising forming a nonwoven fabric from the staple fibers.

63. (Withdrawn) A method according to Claim 59 and further comprising the step of spinning the asymmetric filament prior to the step of mechanically cracking the filament.

64. (Withdrawn) A method according to Claim 57 and further comprising spinning the hollow filament from a melt prior to the step of cracking the filament.

65. (Withdrawn) A method according to Claim 64 and further comprising cutting the filament into staple fiber.

Scr. No. 10/065,436 (Travelute *et al.*) (Filed: 10/17/2002)
Amendment dated 2/28/2005
Reply to Office Action of 12/1/2004

Page 10

66. (Withdrawn) A method according to Claim 65 and further comprising forming a nonwoven fabric from the staple fibers.

67. (Withdrawn) A method according to Claim 57 comprising cracking a filament consisting essentially of polyethylene terephthalate.

68. (Withdrawn) A method according to Claim 57 and further comprising the steps of heat setting the filaments;
cutting the filaments into staple fiber; and
baling the cut staple fibers.

69. (Withdrawn) A method of forming a highly absorbent polyester filament, the method comprising:

spinning an asymmetric hollow filament from a melt;
preferentially quenching the filament to create greater and lesser degrees of polymer orientation along the filament;
drawing the filament to a desired draw ratio;
heat setting the drawn filament; and
mechanically cracking a hollow polyester filament until the filament is sufficiently open to substantially fill with a liquid.

70. (Withdrawn) A method according to Claim 69 comprising mechanically cracking the filament until the filament is sufficiently open to substantially fill with a liquid selected from the group consisting of water, water-based solutions, and water-based suspensions.

71. (Withdrawn) A method according to Claim 69 wherein the drawing step comprises drawing the filament to degree that highly stresses the more highly oriented portions of the filament.

Scr. No. 10/065,436 (Travelut *et al.*) (Filed: 10/17/2002)
Amendment dated 2/28/2005
Reply to Office Action of 12/1/2004

Page 11

72. (Original) A staple filament having a coaxial opening entirely therethrough, the filament having a length defined by the minimum length sufficient to support a meniscus of water in the coaxial opening and a maximum length at which the filament will fill entirely with a liquid selected from the group consisting of water and water-based solutions and suspensions.

73. (Original) A staple filament according to Claim 72 wherein the maximum length is the length above which air pressure between a meniscus at each end of the filament will prevent the opening from filling entirely with the selected liquid.

74. (Original) A staple filament according to Claim 72 comprising polyester.

75. (Original) A staple filament according to Claim 72 comprising polyethylene terephthalate.

76. (Original) A staple filament according to Claim 72 having a length less than about one-half inch.

77. (Original) A staple filament according to Claim 72 having a length of about one-quarter inch.

78. (Original) A staple filament according to Claim 72 having a denier of between about 1 and 45.

79. (Original) A staple filament according to Claim 72 having a denier of between about 1 and 10.

Ser. No. 10/065,436 (Travelutte *et al.*) (Filed: 10/17/2002)
Amendment dated 2/28/2005
Reply to Office Action of 12/1/2004

Page 12

80. (Original) A staple filament according to Claim 72 having a denier of between about 1 and 3.

81. (Withdrawn) A method of forming a highly absorbent filament comprising:
spinning a hollow filament at a denier of between about 1 and 45;
quenching the filament; and
cutting the filament into short staple fibers having a length defined by the minimum length sufficient to support a meniscus of water in the coaxial opening and a maximum length at which the filament will fill entirely with a liquid selected from the group consisting of water and water-based solutions and suspensions.

82. (Withdrawn) A method according to Claim 81 comprising spinning a polyester hollow filament.

83. *(Withdrawn) A method according to Claim 81 comprising spinning the filament to a denier of between about 1 and 10.

84. (Withdrawn) A method according to Claim 81 comprising spinning the filament to a denier of between about 1 and 3.

85. (Withdrawn) A method according to Claim 81 comprising cutting the filament into staple less than about one-half inch in length.

86. (Withdrawn) A method according to Claim 81 comprising cutting the filament into staple about one-quarter inch in length.